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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,982

02/21/2006

Jeffery S. Bradley

63036A

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109 7590 04/19/2007  
THE DOW CHEMICAL COMPANY  
INTELLECTUAL PROPERTY SECTION,  
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EXAMINER

LU, C CAIXIA

ART UNIT

PAPER NUMBER

1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/568,982

Applicant(s)

BRADLEY ET AL.

Examiner

Caixia Lu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/21/06.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC §103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as obvious over Rebhan (US 5,432,244).

The instant claims are directed to a Ziegler-Natta catalyst composition and a polymerization process thereof, wherein the catalyst composition comprising (i) a procatalyst containing a transition metal compound and an internal electron-donor of an ester of aromatic monocarboxylic acid, (ii) an alkylaluminum cocatalyst, and a mixture of different selectivity control agents (SCA) comprising an ester of aromatic monocarboxylic acid and an alkoxysilane compound containing one or more 5- or 6-membered cyclic group.

Rebhan teaches a Ziegler-Natta for olefin polymerization comprising (i) a procatalyst containing a transition metal compound and an internal electron-donor of an ester of aromatic mono- or dicarboxylic acid, (ii) an alkylaluminum cocatalyst, and a mixture of different selectivity control agents (SCA) comprising an ester of aromatic monocarboxylic acid and an alkoxysilane compound (col. 1, line 57 to col. 4, line 68; and Examples 2-3 and 5-16).

While the catalyst compositions of Rebhan's Examples 2-3 and 5-16 are substantially similar to those of the instant claims except that the silane SCA used in Rebhan's Examples does not contain the cyclic groups such as cyclohexyl and cyclopentyl of the instant claims. However, Rebhan expressly teaches silanes such as cyclohexylmethyldimethoxysilane and cyclohexyltrimethoxysilane as the silane SCAs (col. 4, lines 54-55). Thus, it would have obvious to a skilled artisan to employ Rebhan's teaching and use cyclohexylmethyldimethoxysilane or cyclohexyltrimethoxysilane to prepare the catalyst composition since such is within the scope of Rebhan's teaching and in the absence of any showing criticality and unexpected results.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as obvious over Seeger et al. (US 5,414,063).

Seeger's Example 4 demonstrate a propylene polymerization process in the presence of a Ziegler catalyst which has all of the components of the catalyst of instant claims except that the internal electron donor of diethylphthalate is not an monoester of aromatic carboxylic acid. However, Seeger does expressly teach the internal electron donor to be benzoyl chloride which becomes ethyl benzoate (monoester of aromatic carboxylic acid) in the procatalyst preparation process (col. 15-26). Thus, it would have obvious to a skilled artisan to employ Seeger's teaching and use ethyl benzoate as the internal electron donor to prepare the catalyst composition since such is within the scope of Seeger's teaching and in the absence of any showing criticality and unexpected results.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106.

The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

A handwritten signature in black ink, appearing to read 'Caixia Lu', is positioned above the printed name.

Caixia Lu, Ph. D.  
Primary Examiner